

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/005,429 Confirmation No.:
8554
Filed: December 3, 2001
Art Unit: 1638
Examiner: Stuart F. Baum
Title: COMPOSITIONS AND METHODS FOR ALTERING THE
DISULFIDE STATUS OF PROTEINS

Docket No.: 5718-119 (035718/241421)
Customer No.: 00826

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMUNICATION

Sir:

Responsive to the telephonic interview between Examiner Baum and Applicants' undersigned representative on April 6, 2005, Applicants submit concurrently herewith multiple amino acid sequence alignments of the *Zea mays* amino acid sequences for the NADPH-thioredoxin reductase (SEQ ID NO: 25) and the thioredoxin *h* (SEQ ID NO: 14) of the present invention with the respective thioredoxin reductase and thioredoxin amino acid sequences that are disclosed in WO 00/36126.

If in the opinion of the Examiner a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R.

RTA01/2179615v1

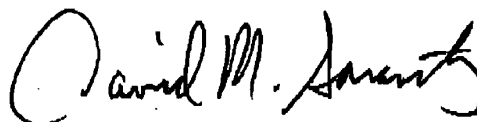
Appl. No.: 10/005,429

April 11, 2005

Page 2

§ 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,



David M. Saravitz
Registration No. 55,593

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Raleigh Office (919) 862-2200
Fax Raleigh Office (919) 862-2260

CERTIFICATION OF FACSIMILE TRANSMISSION

I hereby certify that this paper is being facsimile transmitted to the U.S. Patent and Trademark Office Fax No. (571) 273-0792 on the date shown below.


Karyn Ginn

April 11, 2005

Date

ZM TRx vs Lanahan

		10	20	30	40	50	65	Section 1
ZM TRX-h								
Methanococcus Jannaschii TRX	(1)	1	---	---	---	---	85	
Archaeoglobus Fulgidus TRX1	(1)	---	---	---	---	---	---	
Archaeoglobus Fulgidus TRX1	(1)	---	---	---	---	---	---	
Archaeoglobus Fulgidus TRX2	(1)	---	---	---	---	---	---	
Archaeoglobus Fulgidus TRX2	(1)	---	---	---	---	---	---	
Archaeoglobus Fulgidus TRX4	(1)	---	---	---	---	---	---	
Consensus	(1)	---	---	---	---	---	---	
			A	V				Section 2
	(56)	56	80	90	100	110	120	130
ZM TRX-h								
Methanococcus Jannaschii TRX	(47)	APVYADCASKYP-SAVFLEVVDVDELLEVAKIYGVHVMTFCPIRNGE-TLESFATVDEDELRDV						
Archaeoglobus Fulgidus TRX1	(21)	KRVVEEVANEMPDAVEVEYINVMENPQKAMEYGIMAVPTIVINGDVE---						
Archaeoglobus Fulgidus TRX1	(56)	KPYVEEFAKETHNLTWCNVAEMDANCSKIAQEPGKIKYVPTLVIMDEEH--VFVGSDEVRTAIEGM						
Archaeoglobus Fulgidus TRX2	(58)	APVIEELAKKEYAGKVVGKLTNDENPTIAARYGISAIPTLIFFKXGKVPDQLVGAMPKSELKRWV						
Archaeoglobus Fulgidus TRX4	(15)	EKVVERLMGELNGTVEFEVVDVDEKRELAEKYEVLMPTLVLDAGDEVLGGMGFADYKTAAREAI						
Archaeoglobus Fulgidus TRX4	(35)	SPILEKLSKEYNGEVEFYKLVNDENQDVAFEYGIASIPTVLFFRNGKVVGGFIGAMPESAVERAI						
Consensus	(58)	APVVEELAKEYNGTVEF LNVVDEN BIA EYGI AIPTIVF R GE V FIGAMD LREAI						
								Section 3
	(131)	131	145					
ZM TRX-h								
Methanococcus Jannaschii TRX	(110)	RKYAAAGTTTAPASASA-						
Archaeoglobus Fulgidus TRX1	(82)	KKRL-----						
Archaeoglobus Fulgidus TRX1	(119)	K-----						
Archaeoglobus Fulgidus TRX3	(131)	QRNL-----						
Archaeoglobus Fulgidus TRX2	(80)	LEQISAFLKPDYKN-----						
Archaeoglobus Fulgidus TRX4	(100)	EKALGA-----						
Consensus	(131)	KK L A						

ZM NTR vs lanahan

		Section 1						
		(1) 1	10	20	30	40	50	64
ZM-NTR	(1) 1	MEGSAAPL	TRIC	IIGSGPAA	HTAAI	YAARAE	LKPVL	PEGWMANDIA
Archaeoglobus fulgidus NTR	(1) 1	MEGSAAPL	TRIC	IIGSGPAA	HTAAI	YAARAE	LKPVL	PEGWMANDIA
Methanococcus jannaschii (NTR)	(1) 1	MEGSAAPL	TRIC	IIGSGPAA	HTAAI	YAARAE	LKPVL	PEGWMANDIA
Consensus	(1) 1	MEGSAAPL	TRIC	IIGSGPAA	HTAAI	YAARAE	LKPVL	PEGWMANDIA
		Section 2						
ZM-NTR	(65) 65	70	80	90	100	110	128	
Archaeoglobus fulgidus NTR	(65) 65	70	80	90	100	110	128	
Methanococcus jannaschii (NTR)	(65) 65	70	80	90	100	110	128	
Consensus	(65) 65	70	80	90	100	110	128	
		Section 3						
ZM-NTR	(129) 129	140	150	160	170	180	192	
Archaeoglobus fulgidus NTR	(129) 129	140	150	160	170	180	192	
Methanococcus jannaschii (NTR)	(129) 129	140	150	160	170	180	192	
Consensus	(129) 129	140	150	160	170	180	192	
		Section 4						
ZM-NTR	(193) 193	200	210	220	230	240	256	
Archaeoglobus fulgidus NTR	(193) 193	200	210	220	230	240	256	
Methanococcus jannaschii (NTR)	(193) 193	200	210	220	230	240	256	
Consensus	(193) 193	200	210	220	230	240	256	
		Section 5						
ZM-NTR	(257) 257	270	280	290	300	310	320	
Archaeoglobus fulgidus NTR	(257) 257	270	280	290	300	310	320	
Methanococcus jannaschii (NTR)	(257) 257	270	280	290	300	310	320	
Consensus	(257) 257	270	280	290	300	310	320	

ZM NTR vs lanahan

Section 6

(321) 321 333
ZM-NTR (319) YLQEI GAQEGKSD
Archaeoglobus fulgidus NTR (297) YLTS-----
Methanococcus jannaschii (NTR) (297) YLQKL-----
Consensus (321) YLQ I

Page 2